

June 19, 2011

Draft/Proposed Permit: APC-2011/0158-CONSTRUCTION (NO_x RACT)(NSPS)(FE)

Mountaire Farms of Delaware, Inc.
Natural Gas Boiler 6

Mountaire Farms of Delaware, Inc.
P.O. Box 1320
Millsboro, DE 19966

ATTENTION: Mr. John Wren
Director of Engineering & Environmental Services

Dear Mr. Wren:

Pursuant to the 7 **DE Admin. Code** 1102 Section 2 and Section 11, approval by the Department of Natural Resources and Environmental Control is hereby granted for the construction of one Cleaver Brooks Model CBLE-800-150ST boiler, 800 HP, fired on natural gas, located at the Millsboro Complex on 29106 John J. Williams Highway, Millsboro, Delaware, in accordance with the application submitted on Form Nos. AQM-1, AQM-2, AQM-3.2, AQM-5, AQM-1001, AQM-1001A, AQM-1001W, AQM-1001BB, and supporting calculations dated May 26, 2011 signed by Paul Downes, President.

This permit is issued subject to the following conditions all of which are federally enforceable except Condition 6.1.2 and 2.5:

1. General Provisions

- 1.1 This permit expires on June 29, 2012. If the equipment covered by this permit will not be constructed by June 29, 2012, a request to extend this construction permit must be submitted by May 16, 2012. *[Reference 7 DE Admin. Code 1102 Section 11.10 dated 6/11/06]*
- 1.2 The project shall be constructed in accordance with the information described above. If changes are necessary, revised plans must be submitted and a supplemental approval issued prior to actual construction. *[Reference 7 DE Admin. Code 1102 Section 11 dated 6/11/06]*
- 1.3 Upon presentation of identification, the Company shall authorize officials of the Department to:
 - 1.3.1 Enter upon the Company's premises where a source is located or an emissions-related activity is conducted, or where records that must be kept under the terms

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and conditions of this permit are located. **(This condition was taken from Permit: AQM-005/00004(R2))** [Reference 7 **DE Admin. Code** 1130 Section 6.3.2.1 dated 12/11/00]

- 1.3.2 Have access to and copy, at reasonable times, any record(s) that must be kept under the terms and conditions of this permit. **(This condition was taken from Permit: AQM-005/00004(R2))** [Reference 7 **DE Admin. Code** 1130 Section 6.3.2.2 dated 12/11/00]
- 1.3.3 Inspect, at reasonable times, any record(s) that must be kept under the terms and conditions of this permit. **(This condition was taken from Permit: AQM-005/00004(R2))** [Reference 7 **DE Admin. Code** 1130 Section 6.3.2.3 dated 12/11/00]
- 1.3.4 Sample or monitor, at reasonable times, any substance or parameter for the purposes of assuring compliance with this permit or any applicable requirement. **(This condition was taken from Permit: AQM-005/00004(R2))** [Reference 7 **DE Admin. Code** 1130 Section 6.3.2.4 dated 12/11/00]
- 1.4 This permit may not be transferred to another location or to another piece of equipment or process. [Reference 7 **DE Admin. Code** 1102 Section 7.1 dated 6/11/06]
- 1.5 This permit may not be transferred to another person, owner, or operator unless the transfer has been approved in advance by the Department. Approval (or disapproval) of the permit transfer will be provided by the Department in writing. A request for a permit transfer shall be received by the Department at least thirty (30) days before the date of the requested permit transfer. This request shall include:
 - 1.5.1 Signed letters from each person stating the permit transfer is agreeable to each person; and
 - 1.5.2 An Applicant Background Information Questionnaire pursuant to 7 Del.C., Chapter 79 if the person receiving the permit has not been issued any permits by the Department in the previous five (5) years. [Reference 7 **DE Admin. Code** 1102 Section 7.1 dated 6/11/06 and 7 Del.C., Chapter 79]
- 1.6 The Company shall, upon completion of the construction, installation, or alteration of each emission unit, request in writing that the Department transfer the terms and conditions of this construction permit into the 7 **DE Admin. Code** 1130 operating permit. [Reference 7 **DE Admin. Code** 1102 Section 11.5 dated 6/11/06]
- 1.7 The request shall contain the following information, and shall contain the following language from the responsible official: "I certify, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete." [Reference 7 **DE Admin. Code** 1102 Section 11.5.1 dated 6/11/06]
 - 1.7.1 A description of the compliance status, a complete schedule, and a certification of compliance for the equipment, facility, or air contaminant control device with respect to all applicable requirements, in accordance with 7 **DE Admin. Code** 1130 Section 5.4.8 and 5.4.9; and
 - 1.7.2 A statement of the methods used to determine compliance, including a description of the monitoring, record keeping, and reporting requirements and test methods.

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- 1.8 Upon satisfactory demonstration that the equipment, facility, or air contaminant control device complies with all applicable requirements and all terms and conditions of the construction permit, and not prior to the expiration of the EPA review period provided for in 7 DE Admin. Code 1102, Section 12.5, the Department shall transfer the specified terms and conditions to the 7 DE Admin. Code 1130 permit via the administrative amendment process specified in 7 DE Admin. Code 1130. *[Reference 7 DE Admin. Code 1102 Section 11.5.2 dated 6/11/06]*
- 1.9 The provisions of 7 DE Admin. Code 1102 Sections 2.1, 11.3, and 11.5 shall not apply to the operation of equipment or processes for the purpose of initially demonstrating satisfactory performance to the Department following construction, installation, modification, or alteration of the equipment or processes. The Company shall notify the Department sufficiently in advance of the demonstration and shall obtain the Department's prior concurrence of the operating factors, time period, and other pertinent details relating to the demonstration. *[Reference 7 DE Admin. Code 1102 Section 11.12 dated 6/11/06]*
- 1.10 The owner or operator shall not initiate construction, install, or alter any equipment or facility or air contaminant control device which will emit or prevent the emission of an air contaminant prior to submitting an application to the Department pursuant to 7 DE Admin. Code 1102, and, when applicable, 7 DE Admin. Code 1125, and receiving approval of such application from the Department; except as exempted in 7 DE Admin. Code 1102 Section 2.2. *[Reference 7 DE Admin. Code 1102 Section 2.1 dated 6/11/06]*

2. Emission Limitations

- 2.1 Boiler 6 (Emission Unit 8)
 - 2.1.1 Volatile Organic Compound (VOC) Emissions

VOC emissions shall not exceed 0.13 pounds per hour and 0.57 tons per twelve (12) month rolling period. **(This condition will be transferred to Permit: AQM-005/00004(R2)).** *[Reference 7 DE Admin. Code 1130 Section 6.1.1 dated 12/11/00]*
 - 2.1.2 Nitrogen Oxide (NOx) Emissions

NOx emissions shall not exceed 1.14 pounds per hour and 4.99 tons per twelve (12) month rolling period. **(This condition will be transferred to Permit: AQM-005/00004(R2)).** *[Reference 7 DE Admin. Code 1130 Section 6.1.1 dated 12/11/00]*
 - 2.1.3 Carbon Monoxide (CO) Emissions

CO emissions shall not exceed 1.19 pounds per hour and 5.21 tons per twelve (12) month rolling period. **(This condition will be transferred to Permit: AQM-005/00004(R2)).** *[Reference 7 DE Admin. Code 1130 Section 6.1.1 dated 12/11/00]*
 - 2.1.4 Sulfur Oxide (SOx) Emissions

SO₂ emissions shall not exceed 0.06 pounds per hour and 0.24 ton per twelve (12) month rolling period. **(This condition will be transferred to Permit: AQM-005/00004(R2)).** *[Reference 7 DE Admin. Code 1130 Section 6.1.1 dated 12/11/00]*

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2.1.5 Particulate Matter (PM10) Emissions

PM10 emissions shall not exceed 0.33 pounds per hour and 1.43 tons per twelve (12) month rolling period. **(This condition will be transferred to Permit: AQM-005/00004(R2)).** [Reference 7 **DE Admin. Code** 1130 Section 6.1.1 dated 12/11/00]

- 2.2 Particulate emissions shall not exceed 0.3 lb/MMBTU heat input on a maximum two (2) hour average. **(This condition was taken from Permit: AQM-005/ 00004(R2))** [Reference 7 **DE Admin. Code** 1104, Section 2.1 dated 2/1/81]
- 2.3 Nitrogen oxide emissions from Emission Unit 8 shall not exceed those achieved through an annual tune-up performed by qualified personnel. **(This condition was modified from and will be transferred to Permit: AQM-005/00004(R2))** [Reference 7 **DE Admin. Code** 1112 Section 3.3.2 dated 11/24/93]
- 2.4 No person shall cause or allow the emission of visible air contaminants and/or smoke from a stationary or mobile source, the shade or appearance of which is greater than twenty percent (20%) opacity for an aggregate of more than three (3) minutes in any one (1) hour or more than fifteen (15) minutes in any twenty-four (24) hour period. **(This condition was taken from Permit: AQM-005/00004(R2))** [Reference 7 **DE Admin. Code** 1114 Section 2.1 dated 7/17/84]
- 2.5 Odors from this source shall not be detectable beyond the plant property line in sufficient quantities such as to cause a condition of air pollution. **(This condition was taken from Permit: AQM-005/00004(R2))** [Reference 7 **DE Admin. Code** 1119 Section 2.1 dated 2/1/81]

3. Operational Limitations

- 3.1 The Company shall combust only natural gas in Emission Unit 8. **(This condition was modified from and will be transferred to Permit: AQM-005/00004(R2))** [Reference 7 **DE Admin. Code** 1130 Sections 6.1.1 and 6.2.1 dated 12/11/00]
- 3.2 Total natural gas combusted in Emission Units 1, 2, 3, 4, 5, and 6 shall not exceed 1,630.34 MMSCF in any rolling twelve-month period. **(This condition will be transferred to Permit: AQM-005/00004(R2))** [Reference 7 **DE Admin. Code** 1130 Sections 6.1.1 and 6.2.1 dated 12/11/00]
- 3.3 No owner or operator shall build, erect, install, or use any article, machine, equipment or process, the use of which conceals an emission which would otherwise constitute a violation of an applicable standard. Such concealment includes, but is not limited to, the use of gaseous diluents to achieve compliance with an opacity standard or with a standard which is based on the concentration of a pollutant in the gases discharged to the atmosphere. **(This condition will be transferred to Permit: AQM-005/00004(R2))** [Reference 40 **CFR Part 60 Subpart A Section 60.12**]
- 3.4 The owner or operator of an affected facility shall record and maintain records of the amount of fuel combusted during each operating day. **(This condition will be transferred to Permit: AQM-005/00004(R2))** [Reference 40 **CFR Part 60 Subpart Dc Section 60.48c(g)(1)**]
- 3.5 As an alternative to meeting the requirements of Condition 3.4, the owner or operator of an affected facility may elect to record and maintain records of the amount of fuel combusted during each month. **(This condition will be transferred to Permit: AQM-005/00004(R2))** [Reference 40 **CFR Part 60 Subpart Dc Section 60.48c(g)(2)**]

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- 3.6 As an alternative to meeting the requirements of Condition 3.4, the owner or operator of an affected facility or multiple affected facilities located on a contiguous property unit may elect to record and maintain records of the total amount of each steam generating unit fuel delivered to that property during each calendar month. **(This condition will be transferred to Permit: AQM-005/00004(R2))** [Reference 40 CFR Part 60 Subpart Dc Section 60.48c(g)(3)]
- 3.7 Operating hours for each boiler shall not exceed 8,736 hours in any rolling twelve-month period. The Company shall meet the control technology requirements of Minor New Source Review if the Company requests an increase in operating limits that result in a NOx potential to emit above five tons per year. **(This condition will be transferred to Permit: AQM-005/00004(R2))** [Reference 7 DE Admin. Code 1125, Minor New Source Review]
- 3.8 The Company shall have qualified personnel perform tune-ups for Emission Unit 8. **(This condition was modified from and will be transferred to Permit: AQM-005/00004(R2))** [Reference 7 DE Admin. Code 1112 Section 3.3.2 dated 11/24/93]
- 3.9 At all times, including periods of startup, shutdown, and malfunction, the owner or operator shall, to the extent practicable, maintain and operate the facility, including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determinations of whether acceptable operating procedures are being used will be based on information available to the Department, which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source. **(This condition will be transferred to Permit: AQM-005/00004(R2))** [Reference 7 DE Admin. Code 1101 Section 3 dated 2/1/81, 7 DE Admin. Code 1102 Section 11.6 dated 6/11/06, and 40 CFR Part 60 Subpart A Section 60.11(d)]
- 3.10 All structural and mechanical components of the equipment covered by this permit shall be maintained in proper operating condition and such equipment shall be operated at all times in a manner consistent with good air pollution control practice. **(This condition was taken from Permit: AQM-005/00004(R2))** [Reference 7 DE Admin. Code 1101 Section 3 dated 2/1/81 and 7 DE Admin. Code 1102 Section 11.6 dated 6/11/06]

4. Testing and Monitoring Requirements

- 4.1 Upon written request of the Department, the owner or operator shall, at the Company's expense, sample the emissions of, or fuel used by, an air contaminant emission source, maintain records and submit reports to the Department on the result of such sampling. **(This condition was taken from Permit: AQM-005/00004(R2))** [Reference 7 DE Admin. Code 1117 Section 2.2 dated 7/17/84]
- 4.2 Upon written request by the Department, the Company shall install, maintain, and use emission monitoring devices, as approved in advance by the Department, to determine the nature and amount of emissions from this source. **(This condition was taken from Permit: AQM-005/00004(R2))** [Reference 7 DE Admin. Code 1117 Section 2.1 dated 7/17/84]
- 4.3 Each month, the Company shall monitor the total MMSCF of natural gas combusted in Emission Units 1, 2, 3, 4, 5, and 6. **(This condition will be transferred to Permit: AQM-005/00004(R2))** [Reference 7 DE Admin. Code 1130 Sections 6.1.1 and 6.2.1 dated 12/11/00]
- 4.4 Each month, the Company shall monitor the total MMSCF of natural gas for the twelve (12) month period immediately preceding the date of record for Emission Units 1, 2, 3, 4, 5,

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and 6. (This condition will be transferred to Permit: AQM-005/00004(R2)) [Reference 7 DE Admin. Code 1130 Sections 6.1.1 and 6.2.1 dated 12/11/00]

- 4.5 The Company shall monitor in a log the following: (This condition was taken from Permit: AQM-005/00004(R2)) [Reference 7 DE Admin. Code 1130 Sections 6.1.3.1.2 and 6.2.1 dated 12/11/00 and 7 DE Admin. Code 1112 Section 3.3.2 dated 11/24/93]

4.5.1 Each annual tune-up.

4.5.2 Personnel performing the annual tune-ups.

4.5.3 Maintenance performed on the units.

- 4.6 That required by Condition 3(b)(1)(ii) of Permit: AQM-005/00004(R2). (This condition was modified from and will be transferred to Permit: AQM-005/00004(R2)) [Reference 7 DE Admin. Code 1117 Section 2.2 dated 7/17/84]

5. Record Keeping Requirements

- 5.1 The Company shall maintain, at a minimum, all of the information required by this permit for a minimum of five (5) years from such information's date of record. (This condition was modified from Permit: AQM-005/00004(R2)) [Reference 7 DE Admin. Code 1130 Section 6.1.3.2.2 dated 12/11/00]

- 5.2 Records of all test data shall be maintained. This data includes, but may not be limited to:

5.2.1 The date, place and time of sampling measurements;

5.2.2 The date(s) analyses were performed;

5.2.3 The Company or entity that performed the analyses;

5.2.4 The analytical techniques or methods used;

5.2.5 The results of such analyses; and

5.2.6 The operating conditions existing at the time of sampling or measurement.
[Reference 7 DE Admin. Code 1130 Section 6.1.3.2 dated 12/11/00]

- 5.3 Any owner or operator shall maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of an affected facility; and any malfunction of the air pollution control equipment. (This condition will be transferred to Permit: AQM-005/00004(R2)) [Reference 40 CFR 60 Subpart A, Section 60.7(b)]

- 5.4 In addition to the requirements of Conditions 3(b)(1)(ii) and 3(b)(2) of Permit: AQM-005/00004(R2), the Company shall maintain records of the following: (This condition was modified from and will be transferred to Permit: AQM-005/00004(R2)) [Reference 7 DE Admin. Code 1130 Sections 6.1.3.1.2 and 6.2.1 dated 12/11/00]

5.4.1 Log of maintenance performed on the units.

5.4.2 Log of each annual tune-up.

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- 5.4.3 Log of personnel performing the annual tune-ups.
- 5.4.4 Testing conducted in accordance with Condition 3(b)(1)(ii) of Permit: **AQM-005/00004(R2)**.
- 5.4.5 The owner or operator shall maintain records of the amount of fuel combusted in the boilers in accordance with Condition 3.4, or Condition 3.5, or Condition 3.6. **(This condition will be transferred to Permit: AQM-005/00004(R2))**
- 5.4.6 Each month, the Company shall record the total MMSCF of natural gas for the twelve (12) month period immediately preceding the date of record for Emission Units 1, 2, 3, 4, 5, and 6. **(This condition will be transferred to Permit: AQM-005/00004(R2))**
- 5.4.7 Each month, the Company shall record the hours of operation for each boiler for the twelve (12) month period immediately preceding the date of record for Emission Units 1, 2, 3, 4, 5, and 6. **(This condition will be transferred to Permit: AQM-005/00004(R2))**
- 5.4.8 The rolling twelve (12) month total emissions shall be calculated and recorded each month in a log for each of the following pollutants. **(This condition will be transferred to Permit: AQM-005/00004(R2))**
 - 5.4.8.1 Volatile Organic Compounds
 - 5.4.8.2 Nitrogen Oxides
 - 5.4.8.3 Carbon Monoxide
 - 5.4.8.4 Sulfur Oxides
 - 5.4.8.5 Particulate Matter (PM10)

6. Reporting Requirements

- 6.1 Emission in excess of any permit condition or emissions which create a condition of air pollution shall be reported to the Department:
 - 6.1.1 Immediately upon discovery and after activating the appropriate site emergency plan to the Department's 24-hour complaint line (1-800-662-8802) any deviation that poses an imminent and substantial danger to public health, safety, or the environment. **(This condition was taken from Permit: AQM-005/00004(R2))** [Reference 7 **DE Admin. Code** 1130 Section 6.1.3.3.3.2 dated 12/11/00]
 - 6.1.2 Immediately upon discovery by calling the Environmental Emergency Notification and Compliant number, (800) 662-8802. (State Enforceable Only) **(This condition was taken from Permit: AQM-005/00004(R2))** [Reference 7 **DE Admin. Code** 1130 Section 6.1.3.3.3.3 dated 12/11/00]
- 6.2 Discharges to the atmosphere in excess of any quantity specified 7 **DE Admin. Code** 1203 **"Reporting of a Discharge of a Pollutant or an Air Contaminant"** shall be reported,

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immediately upon discovery and after activating the appropriate site emergency plan, either in person or to the Department's 24-hour compliant line (1-800-662-8802). Discharges in compliance with this permit and excess emissions previously reported under Condition 6.1 of this permit are exempt from this reporting requirement. **(This condition was modified from Permit: AQM-005/00004(R2))** [Reference 7 **DE Admin. Code** 1130 Section 6.1.3.3.3.5 dated 12/11/00 and 7 Del. C. Chapter 60, Section 6028]

- 6.3 In addition to complying with Condition 6.1 and 6.2 of this permit, any reporting required by 7 **DE Admin. Code** 1203 "**Reporting of a Discharge of a Pollutant or an Air Contaminant**" and any other reporting requirements mandated by the State of Delaware, the owner or operator shall for each occurrence of excess emissions, within thirty (30) calendar days of becoming aware of such occurrence, supply the Department in writing with the following information:
- 6.3.1 The name and location of the facility;
 - 6.3.2 The subject source(s) that caused the excess emissions;
 - 6.3.3 The time and date of first observation of the excess emissions;
 - 6.3.4 The cause and expected duration of the excess emissions;
 - 6.3.5 For sources subject to numerical emission limitations, the estimated rate of emissions (expressed in the units of the applicable emission limitation) and the operating data and calculations used in determining the magnitude of the excess emissions; and
 - 6.3.6 The proposed corrective actions and schedule to correct the conditions causing the excess emissions. **(This condition was modified from and will be transferred to Permit: AQM-005/00004(R2))** [Reference 7 **DE Admin. Code** 1112 Section 7.3 paragraphs 1, 2, 3, 4, and 5 dated 11/24/93]
- 6.4 None in addition to that required by Conditions 2(a), 2(b)(9), 2(f)(3), 3(b)(1)(ii), and 3(c)(2) of **Permit: AQM-005/00004(R2)**. **(This condition was modified from and will be transferred to Permit: AQM-005/00004(R2))** [Reference 40 CFR 60.48c]
- 6.5 The owner or operator shall submit Notification of the date Construction or Reconstruction is commenced. This notification shall include the following and shall be postmarked no later than 30 days after such date: **(This condition will be transferred to Permit: AQM-005/00004(R2))** [Reference 40 CFR Part 60 Subpart Dc Section 60.48c(a) and Subpart A Section 60.7(a)]
- 6.5.1 The design heat input capacity of the affected facility and identification of fuels to be combusted in the affected facility.
 - 6.5.2 If applicable, a copy of any federally enforceable requirement that limits the annual capacity factor for any fuel or mixture of fuels.
 - 6.5.3 The annual capacity factor at which the owner or operator anticipates operating the affected facility based on all fuels fired and based on each individual fuel fired.

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- 6.6 The owner or operator shall submit Notification of Initial Startup. This notification shall be postmarked within 15 days of such date and shall include the information detailed in Condition 6.5. **(This condition will be transferred to Permit: AQM-005/00004(R2))** [Reference 40 CFR Part 60 Subpart Dc Section 60.48c(a) and Subpart A Section 60.7(a)]
- 6.7 Each document submitted to the Department/EPA pursuant to this permit shall be certified by a Responsible Official as to truth, accuracy, and completeness. Such certification shall be signed by a Responsible Official and shall contain the language: "I certify, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete." **(This condition was taken from Permit: AQM-005/00004(R2))** [Reference 7 DE Admin. Code 1130 Section 5.6 dated 11/15/93 and 6.3.1 dated 12/11/00]
- 6.8 One (1) original and one (1) copy of all required reports shall be sent to the address below: **(This condition was modified from and will be transferred to Permit: AQM-005/00004(R2))**
- Division of Air Quality
Blue Hen Corporate Center
655 South Bay Road, Suite 5N
Dover, DE 19901
- 6.9 The Company shall submit notifications and reports required by Conditions 6.5 and 6.6 in duplicate to the address below: **(This condition was modified from and will be transferred to Permit: AQM-005/00004(R2))**
- The Director, Air Protection Division
USEPA Region III
Mail Code 3AP00
1650 Arch Street
Philadelphia, PA 19103-2029

7. Compliance Certification

- 7.1 Compliance with the terms and conditions of this permit shall be certified to the Department not later than the first day of February of each year unless the terms and conditions require Compliance Certifications to be submitted more frequently. Such certifications shall cover the previous calendar year and shall be submitted on Form AQM-1001BB. The Compliance Certification shall include the following information: **(This condition was taken from Permit: AQM-005/00004(R2))** [Reference 7 DE Admin. Code 1130 Section 6.3.5.3.1 dated 12/11/00]
- 7.1.1 The identification of each term or condition of the permit that is the basis of the certification. **(This condition was taken from Permit: AQM-005/00004(R2))** [Reference 7 DE Admin. Code 1130 Section 6.3.5.3.1 dated 12/11/00]
- 7.1.2 The Company's current compliance status, as shown by monitoring data and other information reasonably available to the Company. **(This condition was taken from Permit: AQM-005/00004(R2))** [Reference 7 DE Admin. Code 1130 Section 6.3.5.3.2 dated 12/11/00]
- 7.1.3 Such certification shall indicate whether compliance was continuous or intermittent during the covered period. **(This condition was taken from Permit: AQM-005/00004(R2))** [Reference 7 DE Admin. Code 1130 Section 6.3.5.3.3 dated 12/11/00]

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- 7.1.4 The method(s) used for determining the compliance status of the Company, currently and over the reporting period as required by the monitoring, record keeping, and reporting required under Conditions 4, 5, and 6. **(This condition was modified from Permit: AQM-005/00004(R2))** [Reference 7 **DE Admin. Code** 1130 Section 6.3.5.3.4 dated 12/11/00]
- 7.1.5 Such other facts that the Department may require to determine the compliance status of the source. **(This condition was taken from Permit: AQM-005/00004(R2))** [Reference 7 **DE Admin. Code** 1130 Section 6.3.5.3.5 dated 12/11/00]
- 7.2 Each compliance certification shall be submitted to the Department and EPA and shall be certified in accordance with Condition 6.5 of this permit. **(This condition was modified from Permit: AQM-005/00004(R2))** [Reference 7 **DE Admin. Code** 1130 Section 6.3.5.4 dated 12/11/00]
- 7.3 Any additional information possessed by the Company that demonstrates noncompliance with any applicable requirement must also be used as the basis for Compliance Certifications. **(This condition was taken from Permit: AQM-005/00004(R2))** [Reference 62 FR 8314 dated 2/24/97]
- 7.4 None in addition to that required by Condition 3(c)(3) of **Permit: AQM-005/00004(R2)**. **(This condition was modified from and will be transferred to Permit: AQM-005/00004(R2))** [Reference 7 **DE Admin. Code** 1130 Sections 6.1.3.2.3 and 6.2.2 dated 12/11/00]

8. Administrative Conditions

- 8.1 The Company shall have available at the facility at all times a copy of this permit and shall provide a copy of this permit to the Department upon request. **(This condition was taken from Permit: AQM-005/00004(R2))** [Reference 7 **DE Admin. Code** 1102 Section 8.1 dated 6/11/06]
- 8.2 Failure to comply with the provisions of this permit may be grounds for suspension or revocation. [Reference 7 **DE Admin. Code** 1102 Section 6 dated 6/11/06]

Sincerely,

Paul E. Foster, P.E.
Program Manager
Engineering & Compliance Branch

PEF:JLF:MAS
F:\EngAndCompliance\MAS\mas11067.doc

pc: Dover (Title V) File
Melanie Smith
Beth Sise, Environmental Manager, Mountaire Farms of Delaware, Inc., P.O. Box 1320, Millsboro, DE 19966

MEMORANDUM

TO: Paul E. Foster, P.E.

THROUGH: Joanna L. French, P.E.

FROM: Melanie A. Smith, P.E.

SUBJECT: **Mountaire Farms of Delaware, Inc.
Millsboro Complex
Draft/Proposed Permit: APC-2011/0158-CONSTRUCTION (NOx
RACT)(NSPS)(FE)
Natural Gas Boiler 6**

DATE: June 7, 2011

BACKGROUND INFORMATION

Mountaire Farms of Delaware, Inc. requested a Construction Permit to construct one Cleaver Brooks boiler, Model CBLE-800-150ST and designated Boiler 6 (Emission Unit 8) to fire on natural gas. Beth Sise, Environmental Manager, submitted appropriate application forms on May 26, 2011. (Paul Downes, President, signed Form AQM-1001.) The permit will be advertised for thirty days and be concurrently reviewed by EPA for forty-five days. After completion of the construction-to-operation inspection, the Title V Permit: AQM-005/00004(Renewal 2) will be administratively amended to incorporate the requirements of this permit.

The Company has not requested confidentiality.

The Company is located within the Coastal Zone and has obtained a Coastal Zone Permit. This boiler is part of the Resource Recovery Project that was approved by Secretary's Order No. 2010-CZ-0037 and Delaware Coastal Zone Permit No. 385.

The Company is current with their annual fees and has paid appropriate construction application fees.

TECHNICAL INFORMATION

Boiler 6 is identical to Boilers 1, 2, 3, 4, and 5. Each has a rated heat input of 32.659 MMBTU/hr (800 HP). A limit of 1,630.34 MMSCF (RT12) natural gas consumption based on 8,736 hours for all six boilers was placed in the permit.

Potential to Emit

Natural Gas

Hourly emissions for natural gas at 100% firing rate were taken from *Cleaver Brooks Boiler Estimated Exhaust/Emission Performance Data* and are tabled below:

Equipment	SOx (lb/hr)	NOx (lb/hr)	CO (lb/hr)	PM10 (lb/hr)	VOC (lb/hr)
Boiler 6	0.055	1.143	1.192	0.327	0.131

PTE emissions based on 8,760 hours are tabled below:

Equipment	SOx (TPY)	NOx (TPY)	CO (TPY)	PM10 (TPY)	VOC (TPY)
Boiler 6	0.24	5.006	5.221	1.43	0.574

The source does not exceed threshold limits for Sussex County and is a natural minor. Requested permitted operating hours were 24 H/day, 7 days/week, and 52 weeks/yr, for a total of 8,736 hours per

Commented [evr1]: Verify of ask whether each boiler has individual limits or if only one combined limit was established for each pollutant for the 6 boilers.

Commented [evr2]: Combined fuel limit for the 6 boilers is for 8736 hrs/year. Proposed PTE should be less.

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year. Even though the boiler exceeds the 7 DE Admin. Code 1125, Section 4, potential to emit threshold limit of five tons per year for NOx, an 8,736 hour per year operating limit complies with Minor New Source Review.

Rolling twelve month total operating hours will be limited to 8,736 hours to comply with the regulation.

$$1.143 \text{ lb/hr} \times T/2000 \times X \text{ hr/yr} = 5 \text{ TPY NOx}$$

$$X = 8,748.9 \text{ hr/yr}$$

Permitted Emissions

Boiler 6 is operated 24 H/day, 7 days/week, and 52 weeks/yr for a total of 8,736 hours. Using the pound/hour emission rates for natural gas and 8,736 hours/year, natural gas combustion emissions are tabled below:

Pollutant	Boiler 6 (TPY)
SOx	0.24
NOx	4.99
CO	5.21
PM10	1.43
VOC	0.57

SCREEN3 Modeling

The effects air contaminant emissions from natural gas combustion on the public health, safety, and welfare were assessed using Department criteria. The criteria assume no adverse effect when the ratio of the Threshold Limit Value to the Maximum Downwind Concentration (TLV:MDC) is at least 100:1 at the nearest property line and beyond for each air contaminant released. The TLV of each air contaminant was obtained from the pamphlet, 2009 TLVs® and BEIs®, published by the American Conference of Governmental Industrial Hygienists (ACGIH). The MDC of each air contaminant was computed using SCREEN3 air dispersion modeling.

In utilizing SCREEN3, the boiler stack was treated as a point source. Point source variables in SCREEN3 are air contaminant emission rates (in lb/H), stack height (in ft), stack inside diameter (in ft), stack gas exit velocity (in ft/s) or air flow rate (in acfm), stack gas exit temperature (in °F), receptor height above ground level (in ft), and the rural/urban option. Values input for the stack parameters were the following:

Equipment	Stack Height (ft)	Stack Diameter (ft)	Gas Flow Rate (acfm)	Exit Gas Temperature (°F)
Boiler 6	38	2	9971	379

The remaining input values were the default value of 70°F for ambient temperature, a receptor height above ground of 0 ft, and the urban option. The hourly emissions for PM10 were assumed to be that of PM.

SCREEN3 predicts the MDC location for each air contaminant for Boiler 6 to occur 328 ft from the exhaust of each stack. The distance to the nearest property line is 1300 ft. The MDC results from SCREEN3 adjusted to an 8-hour average along with the associated TLVs and the TLV:MDC for each contaminant are shown below:

Commented [evr3]: 7 DE Admin code 1125, Section 4 applies when PTE exceeds the 5 TPY. However, when restricting operating hours to 8736 hours/year, NOx PTE results in 4.992 TPY, which become the new PTE. This means, that the facility would be exempted to Minor NSR (7 DE Admin 1125- 4. This statement seems contrary on this idea.

Recall that by DE regulations, *Potential to Emit* (PTE) means the maximum capacity of a stationary source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is enforceable. Secondary emissions do not count in determining the potential to emit of a stationary source.

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Pollutant	TLV (8-hr, mg/m ³)	MDC (8-hr, mg/m ³)	TLV:MDC
NOx	5.65	0.0060	942
SOx	5.24	0.0003	17,000
VOC	29	0.0007	41,000
CO	28.64	0.0063	4,546
PM10	10	0.0017	5,900

The TLV:MDC ratios for the pollutants are above the 100:1 criteria established by the Department. As such, the public health, safety, and welfare are presumed to not be adversely impacted by emissions from Boiler 6.

REGULATORY REVIEW

- X 7 DE Admin. Code 1102: Permits
- X 7 DE Admin. Code 1104: Particulate Emissions From Fuel Burning Equipment
- X 7 DE Admin. Code 1112: Control of Nitrogen Oxide Emissions
- X 7 DE Admin. Code 1114: Visible Emissions
- X 7 DE Admin. Code 1119: Control of Odorous Air Contaminants
- 7 DE Admin. Code 1120: New Source Performance Standards
- 7 DE Admin. Code 1124: Control of Volatile Organic Compound Emissions
- X 7 DE Admin. Code 1125: Requirements for Preconstruction Review
- X 7 DE Admin. Code 1130: Title V State Operating Permit Program
- 7 DE Admin. Code 1138: Emission Standards for Hazardous Air Pollutants for Source Categories
- X 40 CFR Part 60 Subpart Dc: Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units
- X 40 CFR Part 60 Subpart A: General Provisions

7 DE Admin. Code 1102, Section 2.1, *Permits*, is applicable. The Company is subject to the following requirement, "... no person shall initiate construction, install, alter or initiate operation of any equipment or facility or air contaminant control device which will emit or prevent the emission of an air contaminant prior to receiving approval of his application from the Department..." With this, the Company shall obtain a 7 DE Admin. Code 1102 construction permit prior to construction.

7 DE Admin. Code 1104, Section 2.1, *Particulate Emissions From Fuel Burning Equipment*, is applicable. The boilers are subject to the following particulate emissions limit from fuel burning equipment, "No person shall cause or allow the emission of particulate matter in excess of 0.3 pound per million BTU heat input, maximum 2-hour average, from any fuel burning equipment." This emission limitation was placed in the permit. Compliance with 7 DE Admin. Code 1104 shall be consistently demonstrated as long as the boiler combusts natural gas. The PM emission factor for natural gas is 0.01 lb/MMBTU.

7 DE Admin. Code 1112, Section 1.0, *Control of Nitrogen Oxide Emissions*, is applicable because the facility is a major source of NOx. As stated in section 3.3.2, since the boiler is less than 50 MMBTU/hr, maximum emissions for nitrogen oxides shall not exceed those achieved through an annual tune-up performed by qualified personnel. The owner or operator shall maintain a log of the tune-ups performed. These conditions have been placed in the permit.

DE Admin. Code 1114, Section 2.1, *Visible Emissions*, is applicable. The boiler is subject to the following visible emissions requirement, "No person shall cause or allow the emission of visible air contaminants

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and/or smoke from a stationary or mobile source, the shade or appearance of which is greater than twenty percent (20%) opacity for an aggregate of more than three (3) minutes in any one (1) hour or more than fifteen (15) minutes in any twenty-four (24) hour period." Particulate emissions from the boiler while operating on natural gas are 0.01 lb/MMBTU. This level of particulate should not have a significant potential to cause an opacity violation. Therefore, compliance with the visible emissions standard while operating on natural gas is demonstrated based upon records showing the type of fuel combusted and proper operation of the boiler.

7 DE Admin. Code 1119, Section 2.1, *Control of Odorous Air Contaminants*, is applicable. The boiler is subject to the following control of odorous air contaminants requirement, "No person shall cause or allow the emission of an odorous air contaminant such as to cause a condition of air pollution." Compliance is demonstrated through the Company having no contradictory knowledge of any citizen odor complaint and through a satisfactory review of complaint history by the Department. The record keeping requirement has been placed in the permit.

7 DE Admin. Code 1120, *New Source Performance Standards*, is not applicable to the boilers. According to Section 2.1 of this Regulation, except as provided in Section 9 and Section 11, the provisions of this section are applicable to any fuel burning equipment of more than 250 MMBTU/hr heat input. Section 9 is applicable to electric utility steam generating units, and Section 11 is applicable to fuel gas combustion devices in petroleum refineries.

7 DE Admin. Code 1124, *Control of Volatile Organic Compound Emissions*, is not applicable to Emission Unit 8. The boiler does not emit more than 15 pounds per day of VOCs.

7 DE Admin. Code 1125, Section 4.3, *Minor New Source Review, Requirements for Preconstruction Review*, is applicable because the boilers will be installed after the applicability date of August 11, 2005, the source requires a permit under **7 DE Admin. Code 1102**, the source is not covered by the Emission Offset Provisions (EOP) or Prevention of Significant Deterioration of Air Quality (PSD), and each boiler's potential to emit NOx is greater than 5 TPY. Specifying an operating limit of 8,736 hours/year limits emissions of NOx to below the five ton per year applicability threshold. The Company shall meet the control technology requirements of MNSR if the Company requests an increase in operating limits that result in a NOx potential to emit above five tons per year.

The Millsboro Complex does not have a significant net emissions increase for NOx in Sussex County. Increases in net emissions shall not exceed 40 tons per year in Sussex, when aggregated with all other net increases in emissions from the source over any period of five consecutive calendar years which includes the calendar year in which such increases occur. No part of the five consecutive years shall extend before January 1, 1991. The following table shows permitted emissions of NOx for new installations and a two year average for actual emissions (Annual Air Emission Inventory And Emissions Statement Report) for shutdowns.

Year	Emission Unit	Description	NOx (TPY)
2011	80	Scrubber, Haarslev Model AS-100	0
	81	Scrubber, Haarslev Model AS-100	0
	82	Scrubber, Haarslev Model AS-100	0
	83	Scrubber, Haarslev Model AS-40	0
	84	Thermal Oxidizer, Haarslev Model TRO-25, 1.7 MMBTU/H	4.99
	85	Thermal Oxidizer, Haarslev Model TRO-25, 1.7 MMBTU/H	4.99
	3	Boiler 3, Cleaver Brooks Model CBLE-800-150ST, 32.659	4.99

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Year	Emission Unit	Description	NOx (TPY)
		MMBTU/H	
	4	Boiler 4, Cleaver Brooks Model CBLE-800-150ST, 32.659 MMBTU/H	4.99
	5	Boiler 5, Cleaver Brooks Model CBLE-800-150ST, 32.659 MMBTU/H	4.99
	6	Boiler 6, Cleaver Brooks Model CBLE-800-150ST, 32.659 MMBTU/H	4.99
2010	79	Hatchery Emerg. Gen., 563 kW Cummins, 3.35 MMBTU/H	1.81
	1	Boiler 1, Cleaver Brooks Model CBLE-800-150ST, 32.659 MMBTU/H	4.99
	2	Boiler 2, Cleaver Brooks Model CBLE-800-150ST, 32.659 MMBTU/H	4.99
	1(old)	Boiler 5, Babcock & Wilcox, 36 MMBTU/H	-6.40
	2(old)	Boiler 6, Babcock & Wilcox, 61.7 MMBTU/H	-12.59
	3(old)	Boiler 7, Babcock & Wilcox, 69.0 MMBTU/H	-13.9
	12	Ingredient Receiving Baghouse, Air Lanco 124RLP10	0
	12(old)	Ingredient Receiving Baghouse, MAC baghouse MCF-253-14D	0
	61-I	Poultry Plant 1 Wastewater Emerg. Gen., 300 kW Kohler, 3.53 MMBTU/H	0.608
	61-I(old)	Poultry Plant 1 Wastewater Emerg. Gen., 250 kW Cummins	-1.47 ¹
2009			
2008	6	Dryer 2, Brock BCT3500, 37.727 MMBTU/H	4.9 ²
	6(old)	Dryer 2, Shanzer 660-CEO, 37.4 MMBTU/H	-0.55 ³
2007			
		TOTAL (TPY)	12.33

1. From 2008 inspection, gallons of diesel for January were 3258.26 gal (RT12). From 2009 inspection, gallons of diesel for January were 6269 gal (RT12). Using a heat value of 140,000 BTU/gal and the NOx emission factor of 4.41 lb/MMBTU fuel input (AP-42 Table 3.3-1, *Emission Factors For Uncontrolled Gasoline And Diesel Industrial Engines*), the 2008 emissions were 1.01 TPY and the 2009 emissions were 1.94 TPY; the average of 1.47 TPY NOx was put in the table.
2. Dryer 2 was modified to fire on natural gas in 2010. Emissions shown are from propane.
3. Emissions for Dryers 2 and 5 are combined on the Emission Inventory report. 44% [(37.4MMBTU/H)/(37.4 + 47.5)MMBTU/H] is attributable to Dryer 2. 2006 and 2007 Emission Inventory report numbers were averaged and multiplied by 44%.

7 DE Admin. Code 1130, *Title V State Operating Permit Program*, is applicable because the facility is a major source of SOx, NOx, and PM10. The permit will be advertised for thirty days and be concurrently reviewed by EPA for forty-five days. After completion of the construction-to-operation inspection, the Title V Permit: **AQM-005/00004(Renewal 2)** will be administratively amended to incorporate the requirements of this permit.

7 DE Admin. Code 1138, *Emission Standards for Hazardous Air Pollutants for Source Categories*, is not applicable because the source is not major for HAP.

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40 CFR Part 60, Subpart Dc, Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units, is applicable to Emission Unit 8 since the boiler is 32.659 MMBTU/hr. According to §60.40c(a), except as provided in paragraphs (d), (e), (f), and (g) of this section, the affected facility to which this subpart applies is each steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989 and that has a maximum design heat input capacity of 29 MW (100 MMBTU/hr) or less, but greater than or equal to 2.9 MW (10 MMBTU/hr).

Commented [evr4]: Verify all sections described here are included in the permit.

40 CFR Part 60.48c(a).

§60.48c(a) states that the owner or operator shall submit notification of the date of construction or reconstruction and actual startup, as provided by §60.7 of this part. This notification shall include:

- (1) The design heat input capacity of the affected facility and identification of fuels to be combusted in the affected facility.
- (2) If applicable, a copy of any federally enforceable requirement that limits the annual capacity factor for any fuel or mixture of fuels.
- (3) The annual capacity factor at which the owner or operator anticipates operating the affected facility based on all fuels fired and based on each individual fuel fired.

40 CFR Part 60.48c(g).

(g)(1): Except as provided under paragraphs (g)(2) and (g)(3) of this section, the owner or operator shall record and maintain records of the amounts of fuel combusted during each operating day.

(g)(2): As an alternative to meeting the requirements of (g)(1), the owner or operator may elect to record and maintain records of the amount of fuel combusted during each calendar month.

(g)(3): As an alternative to meeting the requirements of (g)(1), the owner or operator of an affected facility or multiple affected facilities located on a contiguous property unit may elect to record and maintain records of the total amount of each steam generating unit fuel delivered to that property during each calendar month.

40 CFR Part 60.48c(i).

§60.48c(i) requires that all records be maintained for a period of two years. The more stringent five year requirement of the Department will be placed in the permit.

40 CFR Part 60 Subpart A, General Provisions

40 CFR Part 60.7.

In accordance with §60.7(a), the owner or operator shall furnish the Administrator written notification or, if acceptable to both the Administrator and the owner or operator of the source, electronic notification, as follows:

- (1) A notification of the date construction (or reconstruction) is commenced postmarked no later than 30 days after such date.
- (2) A notification of the actual date of initial startup postmarked within 15 days after such date.

According to §60.7(b), any owner or operator shall maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of an affected facility; and any malfunction of the air pollution control equipment.

40 CFR Part 60.11(d).

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At all times, including periods of startup, shutdown, and malfunction, owners and operators shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions..." This requirement has been placed in the permit as Condition 3.3. Compliance shall be demonstrated based on records of maintenance performed on the boiler.

40 CFR Part 60.12:

No owner or operator shall build, erect, install, or use any article, machine, equipment or process, the use of which conceals an emission which would otherwise constitute a violation of an applicable standard. Such concealment includes, but is not limited to, the use of gaseous diluents to achieve compliance with an opacity standard or with a standard which is based on the concentration of a pollutant in the gases discharged to the atmosphere.

RECOMMENDATIONS

I recommend that the attached "Draft/Proposed" Permit be advertised on June 19, 2011 for a thirty-day public comment period pursuant to the requirements of 7 **DE Admin. Code** 1102 Section 12.4. The "Draft/Proposed" Permit will be sent to EPA and affected states on June 17, 2011. EPA will concurrently review the permit for forty-five days.

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pc: Dover File
 Melanie Smith